IEEE P802.15
Wireless Personal Area Networks

Project	IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs)	
Title	**D00 running comment resolution**	
Date Submitted	[3 May, 2005]	
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Re:	[]	
Abstract	[This document is a record of comment resolutions for draft D00 of 802.15.3b.]	
Purpose	[To provide a record of the comment resolutions for draft D00 of 802.15.3b.]	
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1. Comment resolution in Atlanta

1.1 Monday, 14 March 2005

Starting comments: 192 Technical, 155 Editorial, 347 total from 27 commenters. The commenters are 14 no voters and 13 yes voters.

Topics

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Vendor Specific (1) - 178

Big and easy: Start, Stop, Scan, Multicast, Handover
Moderate: Stream, Annex F, SEC, Association, MAC SAP, Priority, SNAP
Hard: Implied-ACK, Relinquish, No PNC, Orphan, Mux, Guardtime, MLME, PM
Hard work: PAR, Scope
Rapid Fire: ASIE, Announce, BSID, CAP, Contributors, Dependent, DEV INFO, Disassociate, Dly-ACK, FCSL, Misc, PIB, Piconet Services, PLME, Reset

Tues AM1 - Start, Stop, Scan
Tues AM2 - Implied-ACK/Relinquish
Tues PM1 - Rapid Fire
Tues PM2 - Annex F, Association
Tues Eve - Ad-Hoc (left over from Tues)
Wed AM1 - No TG3b, Architecture instead, Ad Hoc possible

Wed AM2 - TG3a + plenary
Wed PM1 - Multicast, Handover
Wed PM2 - No PNC, Orphan
Thurs AM1 - No TG3b
Thurs AM2 - Guardtime, PM, Mux
Thurs PM1 - MLME, MAC SAP, SNAP
Thurs PM2 - Stream, Priority.

Resolutions:

CID 93: ACCEPT IN PRINCIPLE. Add the following contributors: Allen Heberling, Knut Odman, Bill Shvodian, John Sarallo, Dan Grossman, James Gilb, Charlie Mellone, Peter Johansson, John Barr, Mike Rudnick, Colleen McGinn, Mark Schrader, Karl Heubaum, Ian Gifford, Jim Allen, Larry Telle, Julian Hall

CID 185: ACCEPT IN PRINCIPLE. Resolve as indicated in CID 93.

1.2 Tuesday, 15 March, 2005 (Beware the Ides of March)

Called into order at 8:05 am, EST.

CID 300: ACCEPT IN PRINCIPLE. Add to 6.3.2.2 following "The primitve parameters …" this text "All of the piconets found during the scan will be reported in separate elements of the PiconetDescriptionSet, even if more than one piconet is found on a given channel."

CID 91: Withdrawn 3/15/05, this will be reported in Start, not Scan.

CID 209: Withdrawn 3/15/05, this will be reported in Start, not Scan.

CID 96: Should be with start, handle later.

CID 95: ACCEPT IN PRINCIPLE. Delete the two reason codes, Add MLME-SCAN.indication with the same parameters as MLME-SCAN.confirm but without ReasonCode or ResultCode.

CID 188: ACCEPT IN PRINCIPLE. Resolve as indicated in CID 95

CID 316: Withdrawn 3/15/05, this will be reported in Start, not Scan.

CID 175: ACCEPT IN PRINCIPLE. Add a MAC PIB value named "MACPIB_AllowedChannelSet", Octets is variable, Definition is "A set of channel indices, one for each channel that the MAC is allowed to use for scanning and starting piconets.", Access is "read/write"

CID 301: Withdrawn 3/15/05, this will be reported in Start, not Scan.

CID 317: Withdrawn 3/15/05, this will be reported in Start, not Scan.

CID 189: ACCEPT IN PRINCIPLE. Add a ReasonCode "NO_CHANNELS_AVAILABLE" to be returned when there aren't any clear channels to start a piconet. Delete "ALREADY_ASSOCIATED".

CID 203: ACCEPT IN PRINCIPLE. Add this to the editorial note

- PNCDesMode - In Table 33
- PNCCapable - Table 33
- MaxCTRqB - Table 33
- SupportedDataRates - Table 92, This is PHYPIB_DataRateVector

- PreferredFragmentSize - In Table 92 of draft, PHYPIB_PreferredFragmentSize
- ATP - Add MACPIB_DesiredATP to Table 34, Octets = 2, Definition = "The ATP value to send in an Association Request command", Access is "Read/Write".
- PNID - Add MACPIB_PNID to Table 34, Octets = 2, Definition = "If associated with a piconet, the PNID of that piconet."
- ChannelIndex - In Table 92, PHYPIB_CurrentChannel
- SECID - Set with MLME-MEMBERSHIP-UPDATE (Check that Clause 9 doesn't assume this is passed in the Start command.)
- CapData - Add to Table 33, MACPIB_CAPData, Octets = 1, Definition = "Indicates the initial setting of the CAP Data Allowed field in the beacon as described in 7.3.1.1. 0x00 = Data frames are not allowed in the CAP, 0x01 = Data frames are allowed in the CAP", Access = "Read/Write"
- CapCommand - Add to Table 33, MACPIB_CAPCommand, Octets = 1, Definition = "Indicates the initial setting of the CAP Commands Allowed field in the beacon as described in 7.3.1.1. 0x00 = Commands are not allowed in the CAP, 0x01 = Commands are allowed in the CAP", Access = "Read/Write"
- CapAssociation - Add to Table 33, MACPIB_CAPAssociation, Octets = 1, Definition = "Indicates the initial setting of the CAP Association Allowed field in the beacon as described in 7.3.1.1. 0x00 = Association commands are not allowed in the CAP, 0x01 = Association commands are allowed in the CAP", Access = "Read/Write"
- MaxTxPower - Add to Table 33, MACPIB_PiconetMaxTXPower, Octets = 1, Definition = "The maximum allowed power for transmission during certain times in the superframe as described in 7.3.1.1.", Access = "Read/Write"
- MCTAUsed - Add to Table 33, MACPIB_MCTAUsed, Octets = 1, Defintion = "The intial setting of the MCTA Used field as described in 7.3.1.1.", Access = "Read/Write"
- MCTAAllocationRate - Determined by the MAC.

CID 239: ACCEPT IN PRINCIPLE. Resolve as indicated in CID 189.

CID 302: ACCEPT IN PRINCIPLE. Resolve as indicated in CID 175.

CID 210: ACCEPT IN PRINCIPLE. Add the ReasonCode as indicated in CID 189, Add the sentence "If the MAC determines that no channels are available, it will respond with an MLME-START.confirm with a ResultCode of FAILURE and ReasonCode of NO_CHANNELS_AVAILABLE." to the end of the subclause.

CID 92: ACCEPT IN PRINCIPLE. Resolve as indicated in CID 210.

CID 177: ACCEPT IN PRINCIPLE. Resolve as indicated in CID 175.

Meeting recessed at 10:03 am EST.

Meeting called to order at 10:32 am EST.

CID 190: Withdrawn, 3/15/05

CID 240: ACCEPT IN PRINCIPLE. Add "HANDOVER_FAILED", this occurs with a ResultCode "FAILURE", see resolution of CID 261.

CID 261: ACCEPT IN PRINCIPLE. Replace:

> "The FCSL initiates the handover process using MLME-STOP.request with RequestType set to “HANDOVER”. This process is illustrated in Figure94a."

With:

"The FCSL initiates the handover process using MLME-STOP.request with RequestType set to HANDOVER. This process is illustrated in Figure94a. The FCSL can choose the target DEV or DEVs for the handover or allow the PNC to determine the target DEV as previously described. If the handover completes successfully the primitive MLME-STOP.confirm is generated with a ResultCode set to SUCCESS. If the handover does not successfully complete within the time period specified by the FCSL, the PNC shall perform the PNC shutdown process defined by [xref 8.2.7]. After completion of the shutdown process, the primitive MLME-STOP.confirm is generated with the ResultCode set to FAILURE and the ReasonCode set to HANDOVER_FAILED."

CID 214: ACCEPT IN PRINCIPLE.: Resolve as indicated in CID 261.

CID 264: Accept

Implied-ACK/Relinquish

Relinquish notes:

1. Relinquish becomes a bit in the header, the next owner is the DestID.

2. Can only relinquish to DEVs that are listening. At a minium, these are the DEVs that are the DestID of the CTA (including BcstID, McstID and McstGrpID).

3. A DEV that gets transmit control from the SrcID of a CTA can only relinquish it back to the SrcID of the CTA.

4. More Data bit in Imm-ACK indicates that a DEV has data to send in the reverse direction.

5. Add a Capability bit (somewhere) that indicates if a DEV supports this. Possibly could do relinquish only to a DEV that sets the More Data bit in an Imm-ACK frame.

6. Need to determine the timeout mCTASharingTimeout (possibly PHY dependent).

7. If the Target does not know the boundaries of the CTA, it shall not use the facility for that CTA and the time in the CTA is lost.

8. If the Target DEV with transmit control does not have data to send, it should relinquish the time? Perhaps Annex F text to describe how it is used?

Can the Target DEV respond with a Dly-ACK burst right away? We should consider this case.

Implied-ACK notes:

Do we allow implied ACK with third party under relinquish? If Implied-ACK is allowed, this should be allowed. (i.e. DEV-2 gets TX control and runs implied-ACK with DEV-3).

Do we allow third party implied-ACK?

Do we have implied-ACK at all?

Table until Wed. PM1, start now with Multicast

Multicast:

CID 172: ACCEPT IN PRINCIPLE. Add a crossreference to 7.1 here and add this to subclause 7.1, "An individual MAC address is a MAC address with the group bit set to zero as defined in IEEE Std. 802-2001.

CID 315: Withdrawn 3/15/05

CID 250: Accept.

Meeting receseed at 12:31 am EST.

Meeting called to order at 1:30 EST.

CID 268: changed to Technical. Accept.

CID 96: ACCEPT IN PRINCIPLE. See also CIDs 210 and 189

PICONET_DETECTED - This becomes NO_CHANNELS_AVAILABLE
ALREADY_STARTED - This is ALREADY_PNC
CHANNEL_INTERFERENCE - This become NO_CHANNELS_AVAILABLE
ALREADY_ASSOCIATED - Deleted as indicated in CID 189.

Various security: Do we do adequate duplicate detection to protect upper layers that do not do duplicate detection? The DEVs should use the SFC to assist them in detecting these. Add text to 9.3.6 that indicates that the device checks the SFC with a sliding window that is at least as large as Dly-ACK buffer. Is SFC per SECID? This needs to be clarified.

CID 125: Accept

CID 103: ACCEPT IN PRINCIPLE. Change to “This includes all of the regular DEVIDs, the PNCID and the NbrIDs but not the reserved IDs, the BcstID, McstID or the UnassocID, ...”

CID 308: ACCEPT IN PRINCIPLE. Add the Multicast Group IE to Tables 51 with PNC allowed to request - "Shall not Request" and DEV allowed to request "May request" and 52 with DEV receives request from DEV - "Shall ignore", DEV receives request from PNC - "Shall ignore" and PNC receives request from DEV - "Shall ignore", and to Table 53 with PNC able to send - "May send" and DEV able to send - "Shall not send"

Rapid Fire: ASIE, Announce, BSID, CAP, Contributors, Dependent, DEV INFO, Disassociate, Dly-ACK, FCSL, Misc, PIB, Piconet Services, PLME, Reset

CID 281: Table, JS and JPKG to work on text.

CID 156: REJECT. The ASIE Request and Response commands result in MAC behavior with a PNC that can optionally support. Because the behavior of the DEV and PNC with respect to these commands is defined in the standard, it is appropriate to include these as commands. The Vendor Specific commands do not have a defined behavior in the standard.

CID 332: REJECT. The ASIE Request and Response commands result in MAC behavior with a PNC that can optionally support. Because the behavior of the DEV and PNC with respect to these commands is defined in the standard, it is appropriate to include these as commands. The Vendor Specific commands do not have a defined behavior in the standard.

CID 254: ACCEPT. The ASIE Request and Response commands result in MAC behavior with a PNC that can optionally support. Because the behavior of the DEV and PNC with respect to these commands is

defined in the standard, it is appropriate to include these as commands. The Vendor Specific commands do not have a defined behavior in the standard.

CID 182: REJECT. The ASIE Request and Response commands result in MAC behavior with a PNC that can optionally support. Because the behavior of the DEV and PNC with respect to these commands is defined in the standard, it is appropriate to include these as commands. The Vendor Specific commands do not have a defined behavior in the standard.

CID 159: Check for text suggested from previous Sponsor ballot. One option is to restart the backoff counter at the beginning of each CAP without doubling the window.

Meeting recessed at 3:30 pm, EST.

Meeting called to order at 4:00 pm EST

Topics: Annex F, Association and then Rapid Fire as able.

CID 67: ACCEPT.

CID 224: ACCEPT IN PRINCIPLE. In F.1.2, Change "TU" to be "CTRq TU field" and add "as described in 7.5.6.1." to the first reference. Change "inter-CTA spacing" to be "MaxTransmitDelay" (in all of Annex F) and add "as described in 6.3.13." to the first reference. In Table F.3, change to 2 allocations with 4 TUs and 2 allocation with 3 TUs. In F.1.3, change MaxCTASpacing to be MaxTransmitDelay everywhere. Add to F.1.4 "The MaxCTASpacing calculated by the PNC will not always be equal to the MaxTransmitDelay desired by the DEV. However, the MaxCTASpacing will always be less than or equal to the MaxTransmit-Delay desired by the DEV." In F.1.5, use "A SourceDataRate of 8 Mb/s." and "A DesiredDataRate 10 Mb/s" and "The MaxTransmitDelay is 5 ms", "A high precedence stream", "MaxRetries of 4" and a "Max-DataFrameSize of 1000 octets". Change to "ACK policy is Imm-ACK." (p. 142, l3). In F.1.6, change "Data Rate" to "AvailableDataRate" (or whatever ends up in the MLME).

CID 321: ACCEPT IN PRINCIPLE. Change the Annex to be Annex E.

CID 275: ACCEPT IN PRINCIPLE. Change to MaxDataFrameSize

CID 292: ACCEPT IN PRINCIPLE. Add the indicated text and also an ReasonCode "TRANSMIT_DELAY_UNSUPPORTED"

CID 288: ACCEPT IN PRINCIPLE. Delete "actual"

CID 291: ACCEPT.

CID 274: ACCEPT.

CID 216: ACCEPT.

CID 158: ACCEPT IN PRINCIPLE. Remove the second Association Response command. The second Association Request command is required for backward compatibility with 802.15.3-2003. (Note, JS and JPKG will provide more information to revisit this issue).

CID 217: ACCEPT (see comment on CID 158).

CID 334: ACCEPT IN PRINCIPLE. Remove the second Association Response command. The second Association Request command is required for backward compatibility with 802.15.3-2003.

CID 2: ACCEPT IN PRINCIPLE. Remove the second Association Response command. The second Association Request command is required for backward compatibility with 802.15.3-2003.

CID 241: ACCEPT.

Committee recessed at 6:01 pm EST.

1.3 Wednesday, 16 March, 2005

Called to order at 1:34 EST.

Schedule for the rest of the meeting.

Wed PM1 - Handover, Implied-ACK, and Rapid Fire as available.
Wed PM2 - No PNC, Orphan
Thurs AM1 - No TG3b
Thurs AM2 - Guardtime, PM, Mux
Thurs PM1 - MLME, MAC SAP, SNAP
Thurs PM2 - Stream, Priority.
Thurs Eve. - Whatever is left.

Announce (1) - 281
CAP (6) - 159, 3, 335, 86, 328, 8
Dependent (3) - 262, 263, 345
DEV INFO (1) - 193
Disassociate (2) - 77, 192
Dly-ACK (4) - 5, 340, 164, 7
FCSL (1) - 168
Guardtime (2) - 230, 90
Handover (8) - 11, 211, 212, 213, 243, 256, 261, 318
Implied-ACK (15) - 6, 69, 85, 155, 225, 226, 227, 228, 229, 271, 314, 322, 324, 325, 331
MAC SAP (8) - 83, 204, 205, 206, 207, 286, 287, 311
Misc (10) - 218, 222, 258, 267, 278, 280, 293, 296, 299, 312
MLME (13) - 13, 14, 23, 29, 94, 154, 157, 186, 195, 237, 327, 330, 333
Mux (4) - 233, 66, 298, 236
No PNC (6) - 166, 1, 295, 234, 64, 231
Orphan (5) - 294, 65, 235, 232, 27
PAR (3) - 26, 30, 184
PIB (1) - 310
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Relinquish (6) - 161, 208, 219, 323, 329, 337
Reset (1) - 170
Scope (3) - 9, 10, 28
SEC (8) - 81, 165, 179, 180, 223, 265, 303, 341
SNAP (3) - 76, 183, 305
Stream (21) - 78, 79, 80, 82, 87, 88, 89, 194, 196, 197, 198, 199, 200, 220, 221, 247, 248, 249, 284, 285, 289, 290
Vendor Specific (1) - 178

CID 178: ACCEPT IN PRINCIPLE. Add a PIB entry to table 32, MACPIB_AssocVendorSpecificIE, octets = variable, Description = "A Vendor Specific IE, as described in 7.4.17, that is sent in the Association Response command, as described in 7.5.1.2, when DEV is acting as PNC."

CID 212: ACCEPT IN PRINCIPLE. Copy Figure 94 to Figure 94a and add an MLME-STOP.cfm just prior to the MLME-NEW-PNC.ind.

CID 11: ACCEPT IN PRINCIPLE. Add NumHandoverTargetDEV to Table 3f with type integer, Valid range 0-mMaxNumValidDEVs, Description "The number of DEVs in the HandoverTargetList."

CID 211: ACCEPT IN PRINCIPLE. Change "shall" to "may" on page 152 and either add back in all the old commands as well as the Multicast Group IE exchange or create a new MSC that has all of these and reference it here. Change the bubble that was FCSL-FCSL optional handover to be "Optional security information transfer", Delete Figure 149 and associated text as this is covered by Figure 148 and the Handover MSC.

CID 213: ACCEPT IN PRINCIPLE. Refer to a new MSC that has the optional and mandatory handover items shown. See CID 211.

CID 243: ACCEPT.

CID 256: ACCEPT IN PRINCIPLE. Resolve as indicated in CID 211.

CID 318: ACCEPT IN PRINCIPLE. Add "PNC_BUSY" to Association response, Stream response, Multicast Configuration response and SPS Configuration response primitves.

Implied-ACK notes:

Do we allow implied ACK with third party under relinquish? If Implied-ACK is allowed, this should be allowed. (i.e. DEV-2 gets TX control and runs implied-ACK with DEV-3).

Do we allow third party implied-ACK? With the new relinquish, this isn't really necessary, so we can delete it.

Do we have implied-ACK at all? If we have it, it would be optional. Implied ACK doesn't require a capability field because the DEV will just ACK back.

Summary:

Relinquish is in, optional with a capability bit.

Implied ACK is between two DEVs only, it is optional without a capability bit.

Rapid Fire: ASIE, Announce, BSID, CAP, Contributors, Dependent, DEV INFO, Disassociate, Dly-ACK, FCSL, Misc, PIB, Piconet Services, PLME, Reset

CID 86: Withdraw 3/16/05

CID 263: ACCEPT.

CID 262: ACCEPT.

Meeting recessed at 3:30 pm EST for book signing

Meeting called to order at 4:20 pm EST.

CID 345: ACCEPT IN PRINCIPLE. Add three new parameters, MinDependentSuperframePercent, type Integer, range 1-100, Definition "The minimum percent of the superframe requested as a CTA for the dependent piconet, as described in 8.2.5 and 8.2.6. This parameter is ignored if the DEV is starting an independent piconet." DesiredDependentSuperframePercent, type Integer, range 1-100, Definition "The desired percent of the superframe requested as a CTA for the dependent piconet, as described in 8.2.5 and 8.2.6. This param-

eter is ignored if the DEV is starting an independent piconet." and AllocatedSuperframePercent, type integer, range 0-100, defintion "The percent of the superframe allocated to the new dependent piconet. If the channel time request was rejected, the value shall be set to zero. This parameter is ignored if the DEV is starting and independent piconet." Add the first to MLME-START.request and the second to MLME-START.confirm. Add a paragraph to the beginning of subclause 6.3 that "The MLME interface models a single piconet environment; support for multiple piconets is implementation-dependent."

CID 193: ACCEPT IN PRINCIPLE. Delete RequestType parameter and "the BcstID" from QueriedDEVID. Also make this edit to Security-Info-Request.

CID 77: ACCEPT IN PRINCIPLE. Add it back in with two parameters, ResultCode, SUCCESS, FAILURE and ReasonCode REQUEST_TIMEOUT, CURRENTLY_PNC, NOT_ASSOCIATED.

Also, put in MLME-MEMBERSHIP-UPDATE.confirm with two parameters, ResultCode, SUCCESS, FAILURE and ReasonCode NOT_ASSOCIATED, TARGET_UNAVAILABLE.

Add SECURITY-MESSAGE.confirm with two parameters, ResultCode, SUCCESS, FAILURE and ReasonCode NOT_ASSOCIATED, TARGET_UNAVAILABLE, REQUEST_TIMEOUT.

Add MULTICAST-RX-SETUP.confirm with two parameters, ResultCode, SUCCESS, FAILURE and ReasonCode NOT_ASSOCIATED, RESOURCES_UNAVAILABLE, REQUEST_TIMEOUT, SOURCE_UNAVAILABLE, UNKNOWN_STREAM.

CID 192: ACCEPT IN PRINCIPLE. Resolve as indicated in CID 77.

CID 164: ACCEPT IN PRINCIPLE. After the fifth paragraph, add the following note: "A DEV shall not send a Dly-ACK frame in response to a frame with the ACK Policy set to Dly-ACK request for which the FCS check fails." See also CID 5, 7, 164, 340.

CID 7: ACCEPT IN PRINCIPLE. After the fifth paragraph, add the following note: "A DEV shall not send a Dly-ACK frame in response to a frame with the ACK Policy set to Dly-ACK request for which the FCS check fails." See also CID 5, 7, 164, 340.

CID 5: ACCEPT IN PRINCIPLE. After the fifth paragraph, add the following note: "A DEV shall not send a Dly-ACK frame in response to a frame with the ACK Policy set to Dly-ACK request for which the FCS check fails." See also CID 5, 7, 164, 340.

CID 340: ACCEPT IN PRINCIPLE. After the fifth paragraph, add the following note: "A DEV shall not send a Dly-ACK frame in response to a frame with the ACK Policy set to Dly-ACK request for which the FCS check fails." See also CID 5, 7, 164, 340.

Totals comments left: Technical 124, Editorial 150.

Meeting recessed at 6:11 pm EST.

1.4 Thursday, 17 March, 2005

Meeting called to order at 10:30 am EST.

Orphan (5) - 294, 65, 235, 232, 27

CID 294: ACCEPT IN PRINCIPLE. This would be better answered in the context of Mesh networking, so the task group will take this to TG5 as an issue to be solved with meshing. Dan Grossman will start confer-

ence calls bi-weekly to discuss how to put all of the 802.15.3 issues into an appropriate Mesh solution that does solve this issue. TG3b will also have at least one 2 hour session joint with TG5 for the purpose of discussing these issues.

CID 65: ACCEPT IN PRINCIPLE. Resolve as indicated in CID 294

CID 235: ACCEPT IN PRINCIPLE. Resolve as indicated in CID 294.

CID 232: ACCEPT IN PRINCIPLE. Resolve as indicated in CID 294.

CID 27: ACCEPT IN PRINCIPLE. Resolve as indicated in CID 294.

No PNC (6) - 166, 1, 295, 234, 64, 231

CID 295: ACCEPT IN PRINCIPLE. This would be better answered in the context of Mesh networking, so the task group will take this to TG5 as an issue to be solved with meshing. Dan Grossman will start conference calls bi-weekly to discuss how to put all of the 802.15.3 issues into an appropriate Mesh solution that does solve this issue. TG3b will also have at least one 2 hour session joint with TG5 for the purpose of discussing these issues.

CID 166: ACCEPT IN PRINCIPLE. Resolve as indicated in CID 295.

CID 1: ACCEPT IN PRINCIPLE. Resolve as indicated in CID 295.

CID 234: ACCEPT IN PRINCIPLE. Resolve as indicated in CID 295.

CID 64: ACCEPT IN PRINCIPLE. Resolve as indicated in CID 295.

CID 231: ACCEPT IN PRINCIPLE. Resolve as indicated in CID 295.

Thurs AM2 - Guardtime, PM, Mux
Thurs PM1 - MLME, MAC SAP, SNAP
Thurs PM2 - Stream, Priority.
Thurs Eve. - Whatever is left.

Motion to change the agenda: Do final report to 3:00 to 3:30 instead of the current time. The time currently allocated for the final report will replaces with comment resolution.

Moved by John Barr, second by Peter Johansson, No discussion, Motion carried by unanimous consent.

CID 230: REJECT. Although this would work for guard time, the standard specifies that only the PNC calculates and allows for guard time, so this proposal would violate backward compatibility.

CID 90: REJECT. Although this would work for guard time, the standard specifies that only the PNC calculates and allows for guard time, so this proposal would violate backward compatibility.

CID 273: ACCEPT IN PRINCIPLE. Option 1 with the following modifications. Add "NONE" for SUCCESS with no error code and add "DEV_IN_PS_MODE" which is given with SUCCESS for the ResultCode.

Meeting recessed at 12:35 pm EST.

Meeting called to order at 1:35 pm EST

Meeting recessed at 1:36 pm EST to allow time for TG4a confirmation vote.

Meeting called to order at 2:40 pm EST (following ice-cream break).

PM (3) - 202, 273, 306

CID 202: ACCEPT IN PRINCIPLE. Add text similar to what was in Clause 6 that describes the use of the MLME-PM-MODE-CHANGE.indication with regards to stream creation. 8.5.1.1 may be the best place for this or it may be 8.13.2.?.

CID 306: ACCEPT IN PRINCIPLE. Add a note that the MAC divides this number by the superframe duration and rounds it down to the next integer.

Mux (4) - 233, 66, 298, 236

CID 233: ACCEPT. Clause 6 will be clarified to indicate that the MAC SAP and MLME SAP model a single instance of a piconet and PAL, interfacing multiple subsytems is implementation-dependent in a layer above the MAC.

CID 66: ACCEPT. Clause 6 will be clarified to indicate that the MAC SAP and MLME SAP model a single instance of a piconet and PAL, interfacing multiple subsytems is implementation-dependent in a layer above the MAC.

CID 298: ACCEPT. Clause 6 will be clarified to indicate that the MAC SAP and MLME SAP model a single instance of a piconet and PAL, interfacing multiple subsytems is implementation-dependent in a layer above the MAC.

CID 236: ACCEPT. Clause 6 will be clarified to indicate that the MAC SAP and MLME SAP model a single instance of a piconet and PAL, interfacing multiple subsytems is implementation-dependent in a layer above the MAC.

Thurs PM1 - MLME, MAC SAP, SNAP
Thurs PM2 - Stream, Priority.

CID 157: ACCEPT IN PRINCIPLE. Clause 8 has the functional description over the air commands and the use of the MLME-SAP. The new description of the MLME-SAP is only the interface and not the functionality. Because of this, the MSCs work best in Clause 8. The resolution of other comments will place more description of the SAP usage in Clause 8, for example: CID 261 a nd CID 210.

CID 333: ACCEPT IN PRINCIPLE. Clause 8 has the functional description over the air commands and the use of the MLME-SAP. The new description of the MLME-SAP is only the interface and not the functionality. Because of this, the MSCs work best in Clause 8. The resolution of other comments will place more description of the SAP usage in Clause 8, for example: CID 261 a nd CID 210.

CID 186: ACCEPT IN PRINCIPLE. Move the paragraphs that make sense into Clause 8, keep text that is required in Clause 6.

CID 94: ACCEPT IN PRINCIPLE. Move the paragraphs that make sense into Clause 8, keep text that is required in Clause 6.

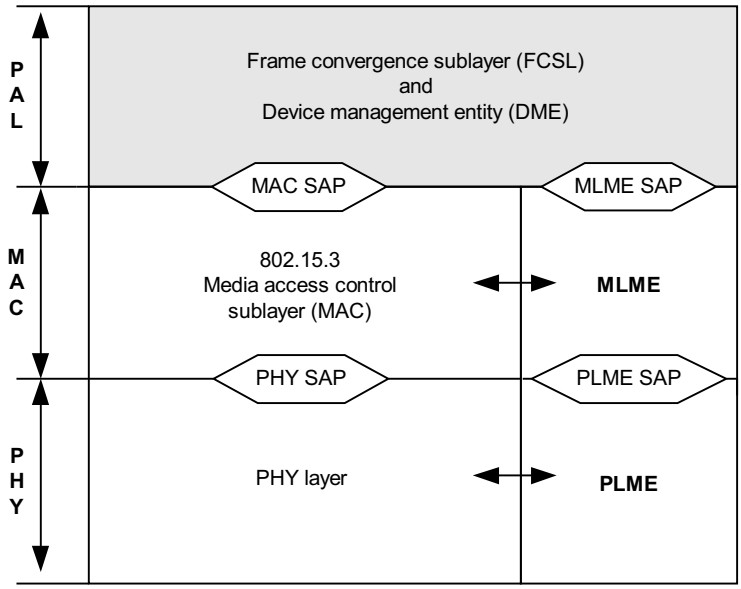
Comment resolution halted at 3:05 pm EST.

Meeting recessed at 3:48 pm EST.

Meeting called to order at 5:30 pm EST.

Thurs PM1 - MLME, MAC SAP, SNAP
Thurs PM2 - Stream, Priority.

CID 154: ACCEPT IN PRINCIPLE. Replace the current model with the picture in 15-05-0151-04.



CID 29: ACCEPT IN PRINCIPLE. Replace the current model with the picture in 15-05-0151-04. Also, editorial text will be added to explain the changes and the reasons for them changes.

CID 23: ACCEPT IN PRINCIPLE. The original MLME interface was broken because the information that was required was not always kept in the same location for the primitives. In some primitive, it was assumed that the information was in the DME, in others the same information was assumed to be kept by the MLME. Modeling the SAP with SDL proved these deficiencies. However, it wasn't clear to the reader that this was the motivation for the change. New text will be added to the editorial instructions to describe the changes and the motivation for the changes. The entire subclause was deleted because attempting to provide editing instructions for the existing subclause would have made the resulting text un-readable.

CID 330: ACCEPT IN PRINCIPLE. Replace the current model with the picture in 15-05-0151-04.

CID 13: ACCEPT.

Meeting recessed at 6:07 pm EST.

Meeting called to order at 7:41 pm EST.

CID 237: ACCEPT IN PRINCIPLE. Delete "or exposed interface."

CID 195: KO will find example of 802 or OSI abstract interface that uses timers.

CID 184: Reject, the PAR doesn’t require us to wait and we are not doing PHY specific modifications.

CID 26: Reject, the PAR doesn't require us to wait and we are not doing PHY specific modifications.

CID 286: ACCEPT IN PRINCIPLE. Replace "0-65 535", with "0-pMaxTransferUnitSize"

CID 287: JS to submit suggestion before Schaumburg. This is a first cut at the MLME.

MLME-ASYNC-ALLOCATE.request	(RequestID, TrgtID, Precedence, ACKPolicy, MaxFrameSize, KBytesRequested (2 bytes of encoding))
MLME-ASYNC-ALLOCATE.confirm	(RequestID, ResultCode, (SUCCESS, FAILURE) ReasonCode)
MLME-ASYNC-TERMINATE.request	(RequestID, TrgtID)
MLME-ASYNC-TERMINATE.confirm	(RequestID, ResultCode, (SUCCESS, FAILURE) ReasonCode)

CID 204: ACCEPT IN PRINCIPLE. Change ConfirmTransmission to be ACKRequested.

CID 206: ACCEPT IN PRINCIPLE. Change ConfirmTransmission to be ACKRequested.

CID 207: ACCEPT IN PRINCIPLE. Change "for transmitting the MSDU .." to be "from when the MSDU is presented to the MAC SAP until the frame has finished transmission and the acknowledgement, if required, has been successfully received. If the transmission fails due to timeout, this field shall be set to the TransmitTimeout value for this frame." and change the definition of TransmitTimeout to use the more precise definition.

CID 83: ACCEPT IN PRINCIPLE. Change ConfirmTransmission to be ACKRequested.

CID 311: ACCEPT IN PRINCIPLE. Resolve as indicated in CID 83.

CID 205: ACCEPT IN PRINCIPLE. Add UserPriority and reference Annex A.1.

Totals: Technical 83 left, Editorial 122 left.

Meeting adjourned at 9:30 pm, EST.

2. Comment resolution in Las Vegas

2.1 Monday, 2 May, 2005

Implied-ACK and Dly-ACK

Dly-ACK CIDs: 5, 7, 164, 340.

Keep the NAK bit in the header, it helps throughput. It is a method already in use in other protocols, e.g., Bluetooth.

In subclause 7.1, move the last paragraph to subclause 8.1 at the end, add a header correctly received sentence, delete the requirement for FCS to pass in that sentence. Delete the sentence "The MAC shall ACK all ... with the ACK Policy field set to Imm-ACK or Dly-ACK request."

In subclause 7.3.2.2, page 112, Delete the sentence "This field shall be greater than or equal to one."

In subclause 7.5.7.2, add crossreferences to subclause 8.1 wherever it discusses "correctly received frames". Also add a crossreference to 8.2.3 and other locations where it occurs in the draft and the standard.

KO will suggest a paragraph that describes that a stream can be allocated from a DEV to the PNC or from the PNC to a DEV. These survive handover, but they may not be meaningful in that context. PNC generated stream allocations are not handed over, but streams created by the PNC's DEV personality are handed over.

In subclause 8.8.3, add the following sentence:

"A DEV shall send a Dly-ACK frame in response to a correctly received header that has the ACK Policy set to Dly-ACK request and DestID set to the DEVID of this DEV or if applicable the PNCID. Because the Dly-ACK frame is sent even if the FCS failed on the data frame with the ACK Policy set to Dly-ACK request, the DEV shall check the contents of the Dly-ACK frame to determine which, if any, MSDUs were correctly received."

Forbid use of implied ACK in CAP and relinquish in contention CTAs.

For CIDs 5, 7, 164, 340 AIP as described above.

Adopt 15-05-0131-00 with the following changes:

No DTD bits or any references to it in the proposer.

With respect to timeouts, the jury is still out, lets put together some MSCs with failures and some probability and throughput graphs. The options for the timeout are either 3 SIFS and 2 Imm-ACKs or 2 SIFS and 1 Imm-ACK, the latter has higher probability of collisions but higher efficiencies when all goes well.

A new rule is that if the originating DEV does not correctly receive a header that indicates that the channel time has been relinquished, it shall retain transmit control. This can lead to the situation where 2 DEVs have transmit control of the same CTA.

Add bits to the "Capabilities IE" using the reserved bits with definitions "Relinquish channel time supported, 0 for not supported, 1 for supported.", "Dly-ACK supported, 0 for not supported, 1 for supported.", "Implied-ACK, 0 for not supported, 1 for supported."

For CID 6, CID 155, and CID 331 - This is a PAR scope issue, resolved as indicated below

REJECT. The PAR for 802.15.3b allows “minor optimizations while preserving backward compatibility”. The 802.15.3b PAR has the following scope and purpose:

13. Scope of Proposed Project:

This amendment contains changes to the IEEE Std 802.15.3 required to improve implementation and interoperability. This will include minor optimizations while preserving backward compatibility. In addition, this amendment will correct errors, clarify ambiguities, and add editorial clarifications.

Is the completion of this document contingent upon the completion of another document? No

14. Purpose of Proposed Project:

The purpose of this amendment is to improve the ability of IEEE Std 802.15.3 to support emerging wireless multimedia applications; e.g., multimedia streaming, time synchronization, low latency data transfer, and peripheral connectivity.

The Implied-ACK bits are a minor optimization that improves the throughput for certain applications, particularly TCP/IP transfers. The use of the bits preserve backwards compatibility as follows:

1) An 802.15.3-2003 DEV that receives a frame with the Implied-ACK bits set will ignore the bits, because they are in a reserved field, and will send an Imm-ACK in response.

2) All frames sent by 802.15.3-2003 DEVs have these bits set to zero, so the DEV will never request an Implied-ACK.

3) Bits in the capabilities field have been defined in the new draft to indicate if a DEV supports Implied-ACK (which is optional). A DEV won’t use the Implied ACK mechanism unless it knows that a DEV supports the facility.

For CIDs 69, 85, 225, 226, 227, 228, 229, 271, 314, 322, 325, 208, 219, 323 - Resolve as indicated in 15-05-0151-04.

CID 324: ACCEPT IN PRINCIPLE: Add the following entries to the PICS: Implied ACK: O and Relinquish channel time: O

CID 161 - ACCEPT IN PRINCIPLE: The subclause will be rewritten as indicated in 15-05-0151-04. The new text clarifies the use of target and originator in this context.

CID 329 - ACCEPT IN PRINCIPLE: The subclause will be rewritten as indicated in 15-05-0151-04. The new text clarifies the use of target and originator in this context.

CID 337 - ACCEPT IN PRINCIPLE: The subclause will be rewritten as indicated in 15-05-0151-04. The new text clarifies the use of target and originator in this context.

CID 305 - REJECT. The frame lengths used in the channel time request include the SNAP header, if present. The MAC, in allocating the channel time only needs to know the overall frame length.

CID 78 - ACCEPT IN PRINCIPLE. Change "MaxCTASpacing" to be "MaxTransmitDelay" in 8.5.1. Annex F is modified as indicated in CID 224.

CID 79 - ACCEPT IN PRINCIPLE. Add a parameter "ACKRequested", type Boolean, valid range True, False, Description, Indicates if the data frames will need to be acknowledged at the MAC layer.

CID 80 - ACCEPT IN PRINCIPLE. Add a parameter "AvailableDataRate", type integer, valid range 1-(2^32-1), description, "The available data rate that either was allocated by the PNC or the data rate that would have been available for a rejected stream request." Add “AvailableDataRate” to the primitve parameters of MLME-CREATE-STREAM.confirm.

CID 82 - ACCEPT IN PRINCIPLE. Add the ReasonCodes, "TERMINATED_BY_PNC" and "TERMINATED_BY_DEST"

CID 87 - ACCEPT IN PRINCIPLE. Change "an appropriate value" to be "the value indicated in the MLME-STREAM-CREATE.request"

CID 88 - ACCEPT IN PRINCIPLE. The functionality described in Figure 116 has been absorbed in the new MLME architecture.

CID 89 - ACCEPT IN PRINCIPLE. Change "an appropriate value" to be "the value indicated in the MLME-STREAM-CREATE.request"

CID 194 - ACCEPT IN PRINCIPLE. Change as indicated in CID 224.

CID 196 - ACCEPT IN PRINCIPLE. Change as indicated in CID 79.

CID 197 - ACCEPT IN PRINCIPLE. Change as indicated in CID 80.

CID 198 - ACCEPT IN PRINCIPLE. Add “AvailableDataRate” to the primitive parameters of MLME-MODIFY-STREAM.confirm, the definition was added CID 80.

CID 199 - Table, do we want to mix encrypted and unencrypted data with a DEV? Agree that on a stream basis, security is either on or off, so remove SECMode from .request in the MAC-SAP.

CID 200 - ACCEPT IN PRINCIPLE. Add ReasonCode to MLME-TERMINATE-STREAM.indication.

CID 220 - ACCEPT.

CID 221 - Withdrawn, 5/02/05

CID 247 - ACCEPT.

CID 248 - ACCEPT.

CID 284 - Table until text is submitted.

CID 285 - REJECT. The termination process has reverted back to the method used in the original standard.

CID 289 - ACCEPT IN PRINCIPLE. Add the following sentence to paragraph on page 89, line 49, “The PNC shall only allocate multiple CTAs per superframe, if the time allocated for each CTA is is no more than one TU different for any of the other CTAs allocated for that stream.”

CID 290 - ACCEPT IN PRINCIPLE. Change the sentence to “This subclause descibes one possible method of converting MLME-CREATE-STREAM.request and MLME-MODIFY-STREAM.request parameters into a channel time request command. However, the implementer is free to choose another method.”

2.2 Tuesday, 3 May, 2005

CID 281 - ACCEPT IN PRINCIPLE. In sublcause 7.5.5.3 change figure title to be “Announce response command format” and change the format to be n fields each called “Announce Respone Block” which have two octets, element ID and Reason code with the same definitions. Add Figure 71b that shows these two blocks.

CID 3 - ACCEPT IN PRINCIPLE. Add a sentence that indicates that a new bw_random(retry_count) is selected at the start of any CP. This is is the same method that is used in 802.11, see subclause 9.3.2.2.

CID 8 - ACCEPT IN PRINCIPLE. Add a sentence that indicates that a new bw_random(retry_count) is selected at the start of any CP. This is is the same method that is used in 802.11, see subclause 9.3.2.2.

CID 159: ACCEPT IN PRINCIPLE. Add a sentence that indicates that a new bw_random(retry_count) is selected at the start of any CP. This is is the same method that is used in 802.11, see subclause 9.3.2.2.

CID 328 - ACCEPT IN PRINCIPLE. Add a sentence that indicates that a new bw_random(retry_count) is selected at the start of any CP. This is is the same method that is used in 802.11, see subclause 9.3.2.2.

CID 335 - ACCEPT IN PRINCIPLE. Add a sentence that indicates that a new bw_random(retry_count) is selected at the start of any CP. This is is the same method that is used in 802.11, see subclause 9.3.2.2.

CID 312 - REJECT. Although this may be a better description, this would require changes throughout the draft because MCTA stream index is used in multiple places.

CID 296 - Withdrawn, 5/3/2005

CID 293 - ACCEPT IN PRINCIPLE. The addition of implied ACK provides the capability to do polling.

CID 299 - Withdrawn, 5/3/2005.

CID 280 - ACCEPT.

CID 218 - ACCEPT IN PRINCIPLE. Change “all of the” to be “one or more of the” and change “shall place” to be “may place”.

CID 278 - Withdraw?

CID 267 - ACCEPT IN PRINCIPLE. Add a sentence to 8.3.3 that says “The DEV Info field for the PNCID shall contain the same information as the DEV Info field for the PNC’s DEV personality with the exception of the DEVID field, which shall be set to the PNCID.”

CID 222 - Withdrawn 5/3/2005.

CID 258 - Withdraw?

CID 195 - ACCEPT IN PRINCIPLE. Add “RequestTimer” to each MLME that has a .request and .confirm pair and may result in a frame being sent over the air. This is type “Duration” valid range, “-” and description “The maximum time allowed for the MAC to return the corresponding confirm primitive, see 8.1.”

CID 184 - REJECT. The 802.15.3b PAR has the following scope and purpose:

13. Scope of Proposed Project:

This amendment contains changes to the IEEE Std 802.15.3 required to improve implementation and interoperability. This will include minor optimizations while preserving backward compatibility. In addition, this amendment will correct errors, clarify ambiguities, and add editorial clarifications.

Is the completion of this document contingent upon the completion of another document? No

14. Purpose of Proposed Project:

The purpose of this amendment is to improve the ability of IEEE Std 802.15.3 to support emerging wireless multimedia applications; e.g., multimedia streaming, time synchronization, low latency data transfer, and peripheral connectivity.

Draft 802.15.3b is an amendment to the current IEEE Std-802.15.3-2003, not something just to support 802.15.3a. Note that it is not dependent on completion of any other documents (e.g., IEEE 802.15.3a or 3c) and applies first to the current 802.15.3 standard. Any changes required to support an alternative PHY selected in either 802.15.3a or 802.15.3c will be made as a part of that amendment. The 802.15.3b ammendment is independent of the alternative PHY ammendments.

CID 26 - REJECT. The PAR for 802.15.3a allows for changes to the MAC that are required for the support of the alternate PHY, whereas 802.15.3b provides corrections, clarifications and minor optimizations. The optimizations are for the MAC and so will apply to all PHYs. The 802.15.3b PAR has the following scope and purpose:

13. Scope of Proposed Project:

This amendment contains changes to the IEEE Std 802.15.3 required to improve implementation and interoperability. This will include minor optimizations while preserving backward compatibility. In addition, this amendment will correct errors, clarify ambiguities, and add editorial clarifications.

Is the completion of this document contingent upon the completion of another document? No

14. Purpose of Proposed Project:

The purpose of this amendment is to improve the ability of IEEE Std 802.15.3 to support emerging wireless multimedia applications; e.g., multimedia streaming, time synchronization, low latency data transfer, and peripheral connectivity.

Draft 802.15.3b is an amendment to the current IEEE Std-802.15.3-2003, not something just to support 802.15.3a. Note that it is not dependent on completion of any other documents (e.g., IEEE 802.15.3a or 3c) and applies first to the current 802.15.3 standard. Any changes required to support an alternative PHY selected in either 802.15.3a or 802.15.3c will be made as a part of that amendment. The 802.15.3b ammendment is independent of the alternative PHY ammendments.

CID 310 - ACCEPT.

CID 21 - ACCEPT IN PRINCIPLE. The text describing when the field can be zero length is found in 8.3.2. In particular, the use of the zero length IE is described in the penultimate paragraph of that subclause.

CID 181 - REJECT. The ASIE MLME and Piconet Services MLME cause different frames to be sent over the air and so different MLMEs have been defined.

CID 309 - ACCEPT IN PRINCIPLE. Delete the test mode primitives.

CID 170 - ACCEPT.

CID 10 - REJECT. The 802.15.3b PAR has the following scope and purpose:

13. Scope of Proposed Project:

This amendment contains changes to the IEEE Std 802.15.3 required to improve implementation and interoperability. This will include minor optimizations while preserving backward compatibility. In addition, this amendment will correct errors, clarify ambiguities, and add editorial clarifications.

Is the completion of this document contingent upon the completion of another document? No

14. Purpose of Proposed Project:

The purpose of this amendment is to improve the ability of IEEE Std 802.15.3 to support emerging wireless multimedia applications; e.g., multimedia streaming, time synchronization, low latency data transfer, and peripheral connectivity.

Multicast configuration commands were added to improve the ability of Std 802.15.3 to support emerging wireless multimedia applications, which is within the purpose of the 802.15.3b PAR. These additions also preserve backward compatibility and provide a minor optimization of the current standard to improve implementation and interoperability. The current standard does not provide a way to map 802.1 group addresses to DEVIDs, thus hampering interoperability with other 802 standards that use group addresses. Without these commands, an extra layer of protocol would be required to filter multicast packets sent to a common multicast DEVID to determine which ones were applicable to that device. This also forced a device to listen to more multicast traffic than necessary. Addition of the multicast configuration commmands improves the efficiency of an implementation.

CID 9 - REJECT. The 802.15.3b PAR has the following scope and purpose:

13. Scope of Proposed Project:

This amendment contains changes to the IEEE Std 802.15.3 required to improve implementation and interoperability. This will include minor optimizations while preserving backward compatibility. In addition, this amendment will correct errors, clarify ambiguities, and add editorial clarifications.

Is the completion of this document contingent upon the completion of another document? No

14. Purpose of Proposed Project:

The purpose of this amendment is to improve the ability of IEEE Std 802.15.3 to support emerging wireless multimedia applications; e.g., multimedia streaming, time synchronization, low latency data transfer, and peripheral connectivity.

The ASIE was included in Std-802.15.3-2003. However, there was not a mechanism defined to allow a non-PNC device to create an ASIE. The ASIE request and response commands were added to improve implementation and interoperability as allowed in the PAR. Without these commands, the development of PALs (e.g., 1394) required the implementers to assume that only the PNC could create ASIEs and the interface to

do this was not publicly defined. These additions also preserve backward compatibility and provide a minor optimization of the current standard.

CID 28 - REJECT. The 802.15.3b PAR is not limited to only editorial and maintenance. All of the examples mentioned were included to improve implementation and interoperability. The scope of the 802.15.3b PAR allows minor optimizations that preserve backward compatibility. The 802.15.3b PAR has the following scope and purpose:

13. Scope of Proposed Project:

This amendment contains changes to the IEEE Std 802.15.3 required to improve implementation and interoperability. This will include minor optimizations while preserving backward compatibility. In addition, this amendment will correct errors, clarify ambiguities, and add editorial clarifications.

Is the completion of this document contingent upon the completion of another document? No

14. Purpose of Proposed Project:

The purpose of this amendment is to improve the ability of IEEE Std 802.15.3 to support emerging wireless multimedia applications; e.g., multimedia streaming, time synchronization, low latency data transfer, and peripheral connectivity.

Comment: Frame format changes.

The changes to the frame formats (other than using reserved bits or reserved values) are as follows:

7.4.10 – a name change to the CTA Rate Factor field which does not change its interpretation.

7.4.16 – The length field did not agree with the description in Clause 8, this fixes an error.

7.5.4.5 and 7.5.4.6 – This corrects an error, the description in Clause 8 requires that the IE can be sent and received.

7.5.6.1 – The changes here are to clarify the use of this command and to correct errors.

Comment: Figure 13 in section 7.3 for example changes reserved bits to now have a meaning (increased functionality).

Figure 13 in 7.3: All 802.15.3-2003 DEVs are required by the standard to ignore reserved fields and they are set to zero when transmitted by an 802.15.3-2003 PNC. The value of zero in these fields indicates that every beacon shall be completely decoded by all DEVs, which is the correct behavior for 802.15.3b DEVs operating with an 802.15.3-2003 PNC. 802.15.3-2003 DEVs will ignore these bits in a beacon sent by an 802.15.3b PNC and so they will decode every beacon, which is the desired and interoperable behavior.

Comment: Addition of section 7.3.5 LLC/SNAP data frame (addition of functionality)
Addition of section 7.4.18 Multicast Group (addition of functionality)
New commands in section 7..5.9
New commands in section 7.5.10.

A few new frames, information elements and commands were added to the updated standard in a way that allows backwards compatibility with 802.15.3-2003 DEVs and PNCs.

7.3.5.1 and 7.3.5.2 – These frames were added to improve interoperability with DEVs that support more than one PAL simultaneously as was implied in the original standard. They are ignored by 802.15.3-2003

DEVs because they use a reserved value of the frame type field. A DEV will only use this type of frame if it has first determined that the other DEV supports these frames by first requesting the Extended Capabilities IE field from a DEV and checking to make sure it supports the data frame.

7.4.18 – This IE is optional and is ignored by 802.15.3-2003 DEVs because it uses a reserved element ID.

7.5.5.3 – This is a new response command that is ignored by by 802.15.3-2003 DEVs because it uses a reserved command type.

7.5.9.3, 7.5.9.4, 7.5.10.1 and 7.5.10.2 – These are optional commands that are not used by 802.15.3-2003 DEVs and are ignored because they use a reserved command type.

7.5.9.5 – This was an optional command ignored by 802.15.3-2003 DEVs, but it has been deleted because it does not allow the fast response time necessary for its use.

The new draft defines new capability bits that indicates if a DEV supports any of these new capabilities. This allows a DEV compliant with 802.15.3b to determine what functionality is supported by any other DEV in the piconet.

CID 81 - Table, consider with CID 199.

CID 341 - ACCEPT IN PRINCIPLE. In subclause 7.2.7.3, change the sentence to be “When the time token, as described in 7.3.1, is updated, the DEV shall reset the SFC to zero.” Add text to subclause 9.3.5 at the end of the fourth paragraph, “A DEV shall only send frames that have increasing SFCs in a superframe, except for frames that are retransmitted with the same SFC without any intervening frames having been sent.” Add text to subclause 9.3.6 after the fourth paragraph, “A DEV shall reject all a frames that do not have a SFC that is strictly greater than the last SFC received from a DEV in that superframe. This ensures that repeats of previous frames are not passed to the higher layers.”

CID 165 - ACCEPT IN PRINCIPLE. In subclause 7.2.7.3, change the sentence to be “When the time token, as described in 7.3.1, is updated, the DEV shall reset the SFC to zero.” Add text to subclause 9.3.5 at the end of the fourth paragraph, “A DEV shall only send frames that have increasing SFCs in a superframe, except for frames that are retransmitted with the same SFC without any intervening frames having been sent.” Add text to subclause 9.3.6 after the fourth paragraph, “A DEV shall reject all a frames that do not have a SFC that is strictly greater than the last SFC received from a DEV in that superframe. This ensures that repeats of previous frames are not passed to the higher layers.”

CID 180 - ACCEPT IN PRINCIPLE. Change the description of TrgtID to be “The DEVID of the DEV to which the security information request is sent.”

CID 223 - ACCEPT IN PRINCIPLE. Remove the first two sentences and the equation.

CID 265 - ACCEPT IN PRINCIPLE. The text is correct, the upper layers determine membership and indicate it by installing or removing management keys.

CID 303 - Withdrawn, 5/3/2005.

CID 179 - REJECT. Verifying the integrity of the beacon and other key broadcast commands, e.g., the PNC Information command requires a group security model. Peer to peer security is also allowed. Changing the security model would not be backward compatible.

CID 76 - REJECT. Requiring the LLC/SNAP header on all frames would break backward compatibility with the older data frames where it was not required. Thus a new frame type is required to allow the use of the header to be required.

CID 84 - ACCEPT IN PRINCIPLE. Add the UserPriority parameter to the MAC-ASYNC-DATA.request and the table, type “Integer”, valid range “0-7”, description “As defined in A.3.1”

CID 24 - ACCEPT.

CID 304 - ACCEPT IN PRINCIPLE. The draft will revert back to the old definitions of priority (now UserPriority), see CID 24.

CID 278 - Withdrawn, 5/3/2005. (email from John Sarallo to James Gilb and John Barr)

CID 258 - Withdrawn, 5/3/2005. (email from John Sarallo to James Gilb and John Barr)

CID 287 - Withdrawn, 4/28/2005. (email from John Sarallo to James Gilb and John Barr)

Remain comments that need work.

CID 30 - We have ensured backward compatibility, need to write up how this is preserved for all of the new optimizations. (JPKG to provide)

CID 81 and CID 199 - Each stream will be secure, but do we also lock down all data in mode 1? (JB, WMS and KO to work on)

CID 284 - Need to supply text that describes how reliability is used in Annex F (JPKG to provide).